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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,672	09/30/2005	Hiroimi Matsumura	278224U/S3X PCT	5573
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
FOGARTY, CAITLIN ANNE				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
06/13/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/551,672

Applicant(s)

MATSUMURA ET AL.

Examiner

CAITLIN FOGARTY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6 and 12-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/003)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 1-6 and 12-17 are pending where claims 1-4 have been amended.
Claims 7-11 and 18-20 have been cancelled.

Status of Previous Rejections

2. The 35 U.S.C. 103(a) rejection of claims 1 – 6 and 12 – 17 as being unpatentable over Takarasawa et al. (JP 11-061393) in view of Rhodes et al. ("Effects of Friction Stir Welding on Microstructure of 7075 Aluminum") is maintained. The rejection of claim 11 has been withdrawn since it was cancelled.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 – 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-4 recite that the joined portion has a structure characteristic of the recrystallization of the material of the joined portion by annealing. However, neither the claims nor the specification clearly define the specific structure of the joined portion and therefore the structure can be interpreted as any structure.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-6 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takarasawa et al. (JP 11-061393 cited in the IDS) in view of Rhodes et al. ("Effects of Friction Stir Welding on Microstructure of 7075 Aluminum" cited in the IDS).

Takarasawa et al. in view of Rhodes et al. is applied to claims 1-6 and 12-17 as discussed in the January 9, 2008 Office action.

The amended feature of instant claims 1-4 is that "the joined portion has a structure characteristic of the recrystallization of the material of the joined portion by annealing." Rhodes et al. teaches that the weld nugget (joined portion) has a recrystallized, fine equiaxed grain structure. Rhodes et al. does not disclose that the recrystallization is done by annealing. However, it is a product-by-process limitation and determination of patentability is based on the product itself and does not depend on its method of production. See MPEP 2113.

Response to Arguments

7. Applicant's arguments filed March 7, 2008 have been fully considered but they are not persuasive.

Arguments are summarized as follows:

- a. Neither JP '393 nor Rhodes et al. is directed to a sputtering target nor do they evidence a concern for changed crystal orientation in a sputtering target due to plastic flow resulting from FSW.
- b. Neither reference teaches that a joined portion produced by the FSW of Rhodes et al. has a recrystallized structure characteristic of annealing.

Examiner's responses are as follows:

- a. JP '393 is directed to a Ru sputtering target. It would have been obvious to one of ordinary skill in the art to make the Ru sputtering target of JP '393 using the method of Rhodes et al. because friction stir welding is a more effective method of welding metal sheets made of the same material because the properties of the joined portion do not vary greatly from the properties of the non-joined portion. Furthermore, neither JP '393 nor Rhodes is required to evidence a concern for changed crystal orientation in a sputtering target due to plastic flow resulting from FSW because it is not included as an instant claim limitation.
- b. See the 35 U.S.C. 103(a) rejection above for discussion of the amended feature of instant claims 1-4.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF